

LISTING OF CLAIMS

E 1. **(Currently Amended)** A mobile station comprising:

- a first antenna;
- a first radio frequency processing circuit receiving and processing signals from said first antenna;
- a second antenna;
- a second radio frequency processing circuit receiving and processing signals from second antenna; and
- a base band processing circuit receiving and combining processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein the determination is based on demodulated processed radio frequency signals.

2. **(Currently Amended)** A mobile station comprising:

- a first antenna;
- a first radio frequency processing circuit receiving and processing signals from said first antenna;
- a second antenna;
- a second radio frequency processing circuit receiving and processing signals from second antenna; and
- a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said first radio frequency processing circuit also transmits signals from said mobile station, and the determination is based on demodulated processed radio frequency signals.

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F1 3. **(Previously Presented)** A mobile station comprising:

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a first antenna;
a first radio frequency processing circuit receiving and processing signals from said first antenna;
a second antenna;
a second radio frequency processing circuit receiving and processing signals from second antenna; and
a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said control signal generated by said base band processing circuit is controlled by a control signal from a base station with which said mobile station is in communication.

4. **(Original)** A mobile station in accordance with claim 3 wherein the base station will increase or decrease its output power to said mobile station after transmitting said control signal until a sufficient signal quality of the communication link.

5. **(Previously Presented)** A mobile station comprising:

a first antenna;
a first radio frequency processing circuit receiving and processing signals from said first antenna;
a second antenna;
a second radio frequency processing circuit receiving and processing signals from second antenna; and
a base band processing circuit receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity, and providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate said second radio frequency processing circuit based on a determination as to whether diversity is appropriate, wherein said mobile station informs a base station of its

deactivation of diversity so that the base station will adjust its output power until a sufficient signal quality is achieved in accordance with the non-diversity mode.

6. **(Original)** A mobile station in accordance with claim 1 wherein said determination as to whether diversity is appropriate is based on a signal quality of a demodulated signal.

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7. **(Original)** A mobile station in accordance with claim 1 wherein said determination as to whether diversity is appropriate is based on a level comparison diversity technique.

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8. **(Original)** A mobile station in accordance with claim 1 wherein said determination as to whether diversity is appropriate is based on a likelihood comparison technique.

9. **(Original)** A mobile station in accordance with claim 1 wherein said determination as to whether diversity is appropriate is based on a measure of bit error rate of a demodulated signal.

10. **(Original)** A mobile station in accordance with claim 1 wherein said determination as to whether diversity is appropriate is based on a measure of frame error rate of a demodulated signal.

11. **(Original)** A mobile station in accordance with claim 1 wherein said determination as to whether diversity is appropriate is based on a measure of a signal to interference ratio of a demodulated signal.

12. **(Original)** A mobile station in accordance with claim 1 wherein said determination as to whether diversity is appropriate is based on a measure of the number of re-transmissions required.

13. **(Currently Amended)** A method of controlling diversity in a mobile station, comprising:

receiving a radio signal on a first antenna;
processing radio signals from said first antenna in a first radio frequency processing circuit;
receiving radio signals in a second antenna;
processing radio signals from the second antenna in a second radio frequency processing circuit;
receiving and combining processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity in a base band processing circuit;
determining whether diversity is appropriate based on demodulated processed radio frequency signals; and
providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate said second radio frequency processing circuit based on said determination as to whether diversity is appropriate.

14. **(Previously Presented)** A method of controlling diversity in a mobile station, comprising:

receiving a radio signal on a first antenna;
processing radio signals from said first antenna in a first radio frequency processing circuit;
receiving radio signals in a second antenna;
processing radio signals from the first antenna in a second radio frequency processing circuit;
receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity in a base band processing circuit;
determining whether diversity is appropriate; and
providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate said second radio frequency processing circuit based on said determination as to whether diversity is appropriate,
further comprising controlling the generation by said base band processing circuit of said control signal by a control signal from a base station with which said mobile station is in communication.

15. **(Original)** A method in accordance with claim 14 further comprising adjusting an output power of the base station to said mobile station after transmitting said control signal until a sufficient signal quality of the communication link.

16. **(Previously Presented)** A method of controlling diversity in a mobile station, comprising:

receiving a radio signal on a first antenna;

processing radio signals from said first antenna in a first radio frequency processing circuit;

receiving radio signals in a second antenna;

processing radio signals from the first antenna in a second radio frequency processing circuit;

receiving processed radio frequency signals from said first radio frequency processing circuit and from said second radio frequency processing circuit for diversity in a base band processing circuit;

determining whether diversity is appropriate; and

providing a control signal to said second radio frequency processing circuit to selectively activate and deactivate said second radio frequency processing circuit based on said determination as to whether diversity is appropriate, further comprising said mobile station informing a base station of its deactivation of diversity so that the base station will adjust its output power until a sufficient signal quality is achieved in accordance with the non-diversity mode.

17. **(Original)** A method in accordance with claim 13 wherein said determination as to whether diversity is appropriate includes measuring a signal quality of a demodulated signal.

18. **(Original)** A method in accordance with claim 13 wherein said determination as to whether diversity is appropriate includes employing a level comparison diversity technique.

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19. **(Original)** A method in accordance with claim 13 wherein said determination as to whether diversity is appropriate includes employing a likelihood comparison technique.

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20. **(Original)** A mobile station in accordance with claim 1 wherein said determination as to whether diversity is appropriate is based on a measure of at least one of the group consisting of a bit error rate of a demodulated signal, a frame error rate of a demodulated signal, a signal to interference ratio of a demodulated signal, and the number of re-transmissions required.
